

IN THE CLAIMS:

Claims 1-106 (canceled without prejudice).

Claim 107 (new): Apparatus for treatment of a treatment area exhibiting a skin disorder and associated inflammation lying at or near the surface of the skin of the patient comprising:

E1 a) at least one light source comprising spectral emittance means for delivering to the treatment area a spectral emittance of light energy in a plurality of discontinuous applications in at least the substantial absence of UV radiation at a dose of at least 9 Joules/cm² sufficient to effectively treat the skin disorder, wherein the spectral emittance is in at least one spectral band in which one of said spectral bands is in the range of 405 to 440nm;

b) an optical system for collecting and shaping the spectral emittance in advance of delivering the spectral emittance to the treatment area;

c) electronic means for controlling parameters associated with the spectral emittance; and

d) a mechanical fixture for holding said light source at an adjustable distance and direction related to the treatment area of the skin disorder.

Claim 108 (new): The apparatus of claim 107 comprising an illumination head comprising at least two converging collimated beams from at least two directions, each of said beams generated by a separate light source positioned at a distance from said other at least one light source.

Claim 109 (new): The apparatus of claim 107 wherein the at least one light source is an ion krypton gas laser light source.

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Claim 110 (new): The apparatus of claim 107 wherein the system for shaping and collecting the spectral emittance is an optical system comprising two orthogonal cylindrical lenses.

Claim 111 (new): The apparatus of claim 107 wherein each of the spectral bands is a narrow spectral band.

Claim 112 (new): The apparatus of claim 107 further comprising cooling means for removing excess heat from the treatment area of the skin disorder during said discontinuous applications.

Claim 113 (new): The apparatus of claim 107 wherein the spectral emittance means comprises means for delivering a dose of at least 18 Joules/cm².

Claim 114 (new): The apparatus of claim 107 wherein the spectral emittance means comprises means for delivering a dose of at least 36 Joules/cm².

Claim 115 (new): The apparatus of claim 107 wherein the light source emits UV radiation, said apparatus further comprising filtering means for removing at least substantially all of the UV radiation emitted by the light source.

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cont.
Claim 116 (new): The apparatus of claim 107 wherein the spectral emittance means and the optical system combine to deliver a power density of at least 40mw/cm² measured at a distance from the light source of 30cm.

Claim 117 (new): The apparatus of claim 107 wherein said light source delivers a principal skin disorder treating effective spectral emittance of light energy range in the range of 405 to 450nm.

Claim 118 (new): The apparatus of claim 107, wherein said parameters are selected from the group consisting of duration, radiated power and emitted spectral bands of said spectral emittance.

Claim 119 (new): The apparatus of claim 107 wherein the light source is spaced apart from the treatment area.

Claim 120 (new): The apparatus of claim 107 comprising means for adjusting the distance of the apparatus from the treatment area to thereby adjust the size of the treatment area.

Claim 121 (new): The apparatus of claim 107 wherein the treatment area is the head of a patient including a face and a chin, said light source comprising means for delivering the spectral emittance of energy to the face, the chin or combination thereof.

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Claim 122 (new): The apparatus of claim 107, wherein said spectral emittance has a power density of at least $20\text{mW}/\text{cm}^2$.

Claim 123 (new): The apparatus of claim 107 wherein said spectral emittance has a power density of at least $40\text{mW}/\text{cm}^2$.

Claim 124 (new): The apparatus of claim 107 comprising means for delivering the spectral emittance for a minimum treatment time of 15 minutes.

Claim 125 (new): The apparatus of claim 124 comprising means for delivering the spectral emittance for a treatment time of from 15 to 60 minutes.

Claim 126 (new): The apparatus of claim 107 wherein the spectral emittance means comprises means for delivering the spectral emittance at a power density of at least $20\text{mW}/\text{cm}^2$ for at least 15 minutes.

Claim 127 (new): The apparatus of claim 107 wherein the treatment area of the skin disorder is at least 200 cm^2 .

Claim 128 (new): The apparatus of claim 107, wherein the optical system further comprises:

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cont.* at least one optical element selected from the group consisting of a liquid filled light guide, a solid transparent light guide, a fiber bundle light guide and an array of lenses and mirrors for collecting and shaping said spectral emittance and for illuminating a treatment area at an adjustable distance, energy density and direction.

Claim 129 (new): The apparatus of claim 107, wherein said at least one light source is a gas discharge lamp.

Claim 130 (new): The apparatus of claim 107, wherein said at least one light source comprises at least one material selected from the group consisting of Gallium, Mercury and metal halides in the form of a gas mixture discharge lamp.

Claim 131 (new): The apparatus of claim 107, wherein said at least one light source further comprises at least one reflector for collecting and projecting the spectral emittance toward the skin disorder.

Claim 132 (new): The apparatus of claim 131 wherein said at least one reflector is selected from the group comprising of an elliptical cross-section cylindrical reflector, a parabolic cross-section cylindrical reflector, and an asymmetric aspheric reflector.

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cont.
Claim 133 (new): The apparatus of claim 107, wherein the electronic means for controlling parameters associated with the spectral emittance comprises an integrated computer module.

Claim 134 (new): The apparatus of claim 107, wherein said at least one light source is at least one diode selected from the group consisting of violet/blue laser diodes and light emitting diodes (LED), and combinations thereof with a narrow spectral band emission in the range 405-440nm.

Claim 135 (new): The apparatus of claim 107, wherein said at least one light source is an array of diodes selected from the group consisting of violet/blue light emitting diodes (LED) and laser diodes, and red and green light emitting diodes (LED) and laser diodes.

Claim 136 (new): The apparatus of claim 107, wherein said at least one light source is selected from the group consisting of LED diodes, laser diodes and gas discharge lamps and combinations thereof.

Claim 137 (new): The apparatus of claim 107, wherein the spectral bands of the spectral emittance are in the violet/blue range and at least one spectral band in the green and red range.

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cont.
Claim 138 (new): The apparatus of claim 107 wherein the skin disorder is selected from the group consisting of acne and seborrhea.

Claim 139 (new): The apparatus of claim 107 further comprising cooling means for removing excess heat from the treatment area of the skin disorder during said discontinuous applications.

Claim 140 (new): The apparatus of claim 107 wherein the spectral emittance means comprises means for delivering a dose of at least 18 Joules/cm².

Claim 141 (new): The apparatus of claim 107 wherein the spectral emittance means comprises means for delivering a dose of at least 36 Joules/cm².

Claim 142 (new): The apparatus of claim 107 wherein the light source emits UV radiation, said apparatus further comprising filtering means for removing at least substantially all of the UV radiation emitted by the light source.

Claim 143 (new): The apparatus of claim 107 wherein the spectral emittance means and the optical system combine to deliver a power density of at least 40mw/cm² measured at a distance from the light source of 30cm.

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Cont.
Claim 144 (new): The apparatus of claim 107 wherein said light source delivers a principal skin disorder treating effective spectral emittance of light energy range in the range of 405 to 450nm.

Claim 145 (new): The apparatus of claim 108, wherein said parameters are selected from the group consisting of duration, radiated power and emitted spectral bands of said spectral emittance.

Claim 146 (new): The apparatus of claim 108 wherein the light source is spaced apart from the treatment area.

Claim 147 (new): The apparatus of claim 108 comprising means for adjusting the distance of the apparatus from the treatment area to thereby adjust the size of the treatment area.

Claim 148 (new): The apparatus of claim 108 wherein the treatment area is the head of the patient including a face and a chin, said light source comprises means for delivering the spectral emittance of energy to the face, to the chin or combination thereof.

Claim 149 (new): The apparatus of claim 108 wherein the spectral emittance has a power density of at least $20\text{mW}/\text{cm}^2$.

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cont.
Claim 150 (new): Apparatus for treatment of a treatment area exhibiting a skin disorder and associated inflammation lying at or near the surface of the skin of the patient comprising:

a) at least one light source comprising spectral emittance means for delivering to the treatment area a spectral emittance of light energy in a plurality of discontinuous applications in at least the substantial absence of UV radiation at a dose of at least $9\text{ Joules}/\text{cm}^2$ sufficient to effectively treat the skin disorder, wherein the spectral emittance is in at least one spectral band in which one of said spectral bands is in the range of 405 to 440nm;

b) an optical system comprising a reflector having an elliptical cross-section comprising a first focal point and a second focal point for collecting and shaping the spectral emittance in advance of delivering the spectral emittance to the treatment area; and

c) electronic means for controlling parameters associated with the spectral emittance.

Claim 151 (new): The apparatus of claim 150 wherein each of the spectral bands are narrow spectral bands.

Claim 152 (new): The apparatus of claim 150, wherein said parameters are selected from the group consisting of duration, radiated power and emitted spectral bands of said spectral emittance.

Claim 153 (new): The apparatus of claim 150 wherein the light source comprises means for delivering the spectral emittance of energy to multiple locations in the treatment area.

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Claim 154 (new): The apparatus of claim 150, wherein said spectral emittance has a power density of at least $20\text{mW}/\text{cm}^2$.

Claim 155 (new): The apparatus of claim 150, wherein the electronic means for controlling parameters associated with the spectral emittance comprises an integrated computer module.

Claim 156 (new): The apparatus of claim 150, wherein said at least one light source is at least one diode selected from the group consisting of violet/blue laser diodes and light emitting diodes (LED), and combinations thereof with a narrow spectral band emission in the range 405-440nm.

Claim 157 (new): The apparatus of claim 150, wherein said at least one light source is an array of diodes selected from the group consisting of violet/blue light emitting diodes (LED) and laser diodes, and red and green light emitting diodes (LED) and laser diodes.

Claim 158 (previously added): The apparatus of claim 150, wherein said at least one light source is selected from the group consisting of LED diodes, laser diodes and gas discharge lamps and combinations thereof.

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Claim 159 (new): The apparatus of claim 150, wherein the spectral bands of the spectral emittance are in the violet/blue range and at least one spectral band in the green and red range.

Claim 160 (new): The apparatus of claim 150 wherein the skin disorder is selected from the group consisting of acne and seborrhea.

Claim 161 (new): The apparatus of claim 150 wherein each of the spectral bands are narrow spectral bands.

Claim 162 (new): The apparatus of claim 150 further comprising cooling means for removing excess heat from the treatment area of the skin disorder during said discontinuous applications.

Claim 163 (new): The apparatus of claim 150 wherein the spectral emittance means comprises means for delivering a dose of at least 18 Joules/cm².

Claim 164 (new): Apparatus for treatment of a treatment area exhibiting a skin disorder and associated inflammation lying at or near the surface of the skin of the patient comprising:

a) at least one light source comprising spectral emittance means for delivering to the treatment area a spectral emittance of light energy in a plurality of discontinuous applications in at least the substantial absence of UV radiation at a dose of at least 9 Joules/cm² sufficient to effectively treat the skin disorder, wherein the spectral emittance is in at least one spectral band in which one of said spectral bands is in the range of 405 to 440nm;

b) an optical system for collecting and shaping the spectral emittance in advance of delivering the spectral emittance to the treatment area; and

c) electronic means comprising an integrated computer module comprising a display unit, said electronic means for controlling parameters associated with the spectral emittance.

Claim 165 (new): The apparatus of claim 164 wherein each of the spectral bands are narrow spectral bands.

Claim 166 (new): The apparatus of claim 164 further comprising cooling means for removing excess heat from the treatment area of the skin disorder during said discontinuous applications.

Claim 167 (new): The apparatus of claim 164 wherein the spectral emittance means comprises means for delivering a dose of at least 18 Joules/cm².

Claim 168 (new): The apparatus of claim 164 wherein the spectral emittance means comprises means for delivering a dose of at least 36 Joules/cm².

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Claim 169 (new): The apparatus of claim 164 wherein the light source emits UV radiation, said apparatus further comprising filtering means for removing at least substantially all of the UV radiation emitted by the light source.

Claim 170 (new): The apparatus of claim 164 wherein the spectral emittance means and the optical system combine to deliver a power density of at least 40mw/cm² measured at a distance from the light source of 30cm.

Claim 171 (new): The apparatus of claim 164 wherein said light source delivers a principal skin disorder treating effective spectral emittance of light energy range in the range of 405 to 450nm.

Claim 172 (new): The apparatus of claim 164, wherein said parameters are selected from the group consisting of duration, radiated power and emitted spectral bands of said spectral emittance.

Claim 173 (new): The apparatus of claim 164 wherein the light source is spaced apart from the treatment area.

Claim 174 (new): The apparatus of claim 164 comprising means for adjusting the distance of the apparatus from the treatment area to thereby adjust the size of the treatment area.

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Claim 175 (new): The apparatus of claim 164 wherein the light source comprises means for delivering the spectral emittance of energy to multiple locations in the treatment area.

Claim 176 (new): The apparatus of claim 164 wherein the treatment area is the head of a patient and the multiple locations include the sides of the face and the chin.

Claim 177 (new): The apparatus of claim 164, wherein said spectral emittance has a power density of at least 20mW/cm².

Claim 178 (new): The apparatus of claim 164 wherein said spectral emittance has a power density of at least $40\text{mW}/\text{cm}^2$.

Claim 179 (new): The apparatus of claim 164 comprising means for delivering the spectral emittance for a minimum treatment time of 15 minutes.

Claim 180 (new): The apparatus of claim 164 comprising means for delivering the spectral emittance for a treatment time of from 15 to 60 minutes.

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Claim 181 (new): The apparatus of claim 164 wherein the spectral emittance means comprises means for delivering the spectral emittance at a power density of at least $20\text{mW}/\text{cm}^2$ for at least 15 minutes.

Claim 182 (new): The apparatus of claim 164 wherein the treatment area of the skin disorder is at least 200 cm^2 .

Claim 183 (new): The apparatus of claim 164, wherein said at least one light source further comprises at least one reflector for collecting and projecting the spectral emittance toward the skin disorder.

Claim 184 (new): The apparatus of claim 164 wherein said reflector is selected from the group comprising of an elliptical cross-section cylindrical reflector, a parabolic cross-section cylindrical reflector, and an asymmetric aspheric reflector.

Claim 185 (new): The apparatus of claim 164 wherein the integrated computer module further comprises a display unit comprising a touch screen.

Claim 186 (new): The apparatus of claim 164, wherein said at least one light source is at least one diode selected from the group consisting of violet/blue laser diodes and light emitting diodes (LED), and combinations thereof with a narrow spectral band emission in the range 405-440nm.

Claim 187 (new): The apparatus of claim 164, wherein said at least one light source is an array of diodes selected from the group consisting of violet/blue light emitting diodes (LED) and laser diodes, and red and green light emitting diodes (LED) and laser diodes.

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Claim 188 (new): The apparatus of claim 164, wherein said at least one light source is selected from the group consisting of LED diodes, laser diodes and gas discharge lamps and combinations thereof.

Claim 189 (new): The apparatus of claim 164, wherein the spectral bands of the spectral emittance are in the violet/blue range and at least one spectral band in the green and red range.

Claim 190 (new): The apparatus of claim 164 wherein the skin disorder is selected from the group consisting of acne and seborrhea.

Claim 191 (new): A method of treating a treatment area exhibiting a skin disorder at or near the surface of the skin of a patient comprising:

a) applying to the treatment area in a plurality of discontinuous applications a spectral emittance of light energy at least in the substantial absence of UV radiation at a dose of at least 9 Joules/cm² sufficient to effectively treat the skin disorder, said spectral emittance comprising at least one spectral band in which one spectral band is a narrow spectral band and one of the spectral bands is in the range of 405 to 440 nm, while maintaining the treatment area at a patient acceptable temperature.

Claim 192 (new): The method of claim 191 wherein the dose is at least 36 Joules/cm².

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Claim 193 (new): The method of claim 191 wherein the skin disorder is caused by skin disorder generating bacteria, said method comprising applying said spectral emittance of light energy for a time sufficient to facilitate the reaction of porphyrins produced by the bacteria and oxygen to produce peroxides which are toxic to the bacteria.

Claim 194 (new): The method of claim 191 comprising applying said spectral emittance of light energy at time periods which enable the porphyrins produced by the bacteria during the time period between each application to react with oxygen in the presence of said spectral emittance and consequently to produce peroxides and

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for the peroxides to kill the bacteria in sufficient amounts so as to reduce the mass of bacteria associated with the skin disorder, and repeating the application until the bacteria mass is reduced below a predetermined level.

Claim 195 (new): The method of claim 191 wherein the dose is at least 18 Joules/cm².

Claim 196 (new): The method of claim 191 wherein the dose is at least 36 Joules/cm².

Claim 197 (new): The method of claim 191 further comprising removing heat from the skin to maintain the skin at a patient acceptable temperature.

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Claim 198 (new): The method of claim 191 comprising applying to the treatment area a spectral emittance of light energy which has had UV radiation filtered therefrom.

Claim 199 (new): The method of claim 191 comprising applying to the treatment area said spectral emittance of light energy principally in the range of 405 to 450nm.

Claim 200 (new): The method of claim 191 wherein each discontinuous application is at least 15 minutes.

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Claim 201 (new): The method of claim 191 wherein each discontinuous application is from 15 to 60 minutes.

Claim 202 (new): The method of claim 191 wherein the treatment area of the skin disorder is at least 200 cm².

Claim 203 (new): The method of claim 191 comprising controlling parameters associated with the spectral emittance of light energy through an integrated computer module.

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Claim 204 (new): The method of claim 203, wherein the integrated computer module comprises a display unit for displaying an imaged illumination treatment area.

Claim 205 (new): The method of claim 204 wherein the integrated computer module further comprises a display unit comprising a touch screen.

Claim 206 (new): The method of claim 191, wherein the spectral emittance of light energy is from at least one diode selected from the group consisting of violet/blue laser diodes and light emitting diodes (LED), and combinations thereof with narrow spectral band emission in the range 405-440nm.

Claim 207 (new): The method of claim 191, wherein the spectral emittance of light energy is from an array of diodes selected from the group consisting of violet/blue light emitting diodes (LED) and laser diodes, and light emitting diodes (LED) and laser diodes with spectral bands emission in the red and green range.

Claim 208 (new): The method of claim 191, wherein the spectral emittance of light energy is from a member selected from the group consisting of LED diodes, laser diodes and gas discharge lamps and combinations thereof.

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Claim 209 (new): The method of claim 191, wherein the spectral bands of the spectral emittance are in the violet/blue range and at least one spectral band in the green and red range.

Claim 210 (new): The method of claim 191 wherein the skin disorder is selected from the group consisting of acne and seborrhea.

Claim 211 (new): A method of treating a treatment area exhibiting a skin disorder at or near the surface of the skin of a patient comprising:

a) applying to the treatment area in a plurality of discontinuous applications a spectral emittance of light energy having a power density of at least $20\text{mW}/\text{cm}^2$ at least in the substantial absence of UV radiation at a dose of at least $9\text{ Joules}/\text{cm}^2$ sufficient to effectively treat the skin disorder, said spectral emittance comprising at least one spectral band in which one of the spectral

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bands is in the range of 405 to 440 nm, while maintaining the treatment area at a patient acceptable temperature.

Claim 212 (new): The method of claim 211 wherein the power density is at least $40\text{mW}/\text{cm}^2$ measured at a distance of 30 cm from the source of the spectral emittance of light energy.

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Claim 213 (new): The method of claim 211 wherein the skin disorder is caused by skin disorder generating bacteria, said method comprising applying said spectral emittance of light energy for a time sufficient to facilitate the reaction of porphyrins produced by the bacteria and oxygen to produce peroxides which are toxic to the bacteria.

Claim 214 (new): The method of claim 213 comprising applying said spectral emittance of light energy at time periods which enable the porphyrins produced by the bacteria during the time period between each application to react with oxygen in the presence of said spectral emittance and consequently to produce peroxides and for the peroxides to kill the bacteria in sufficient amounts so as to reduce the mass of bacteria associated with the skin disorder, and repeating the application until the bacteria mass is reduced below a predetermined level.

Claim 215 (new): The method of claim 211 wherein the dose is at least 18 Joules/ cm^2 .

Claim 216 (new): The method of claim 211 further comprising removing heat from the skin to maintain the skin at a patient acceptable temperature.

Claim 217 (new): The method of claim 211 comprising applying to the treatment area a spectral emittance of light energy which has had UV radiation filtered therefrom.

Claim 218 (new): The method of claim 211 comprising applying to the treatment area said spectral emittance of light energy principally in the range of 405 to 450nm.

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Claim 219 (new): The method of claim 211 wherein said spectral emittance of light energy has a power density of at least 40mW/cm².

Claim 220 (new): The method of claim 211 wherein each discontinuous application is at least 15 minutes.

Claim 221 (new): The method of claim 220 wherein each discontinuous application is from 15 to 60 minutes.

Claim 222 (new): The method of claim 211 wherein the treatment area of the skin disorder is at least 200 cm².

Claim 223 (new): The method of claim 211 comprising controlling parameters associated with the spectral emittance of light energy through an integrated computer module.

Claim 224 (new): The method of claim 211, wherein the spectral emittance of light energy is from at least one diode selected from the group consisting of violet/blue laser diodes and light emitting diodes (LED), and combinations thereof with narrow spectral band emission in the range 405-440nm.

Claim 225 (new): The method of claim 211, wherein the spectral emittance of light energy is from an array of diodes selected from the group consisting of violet/blue light emitting diodes (LED) and laser diodes, and light emitting diodes (LED) and laser diodes with spectral bands emission in the red and green range.

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Claim 226 (new): The method of claim 211, wherein the spectral emittance of light energy is from a member selected from the group consisting of LED diodes, laser diodes and gas discharge lamps and combinations thereof.

Claim 227 (new): The method of claim 211, wherein the spectral bands of the spectral emittance are in the violet/blue range and at least one spectral band in the green and red range.

Claim 228 (new): The method of claim 211 wherein the skin disorder is selected from the group consisting of acne and seborrhea.

Claim 229 (new): A method of treating a treatment area exhibiting a skin disorder at or near the surface of the skin of a patient comprising:

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a) applying to the treatment area in a plurality of discontinuous applications a spectral emittance of light energy at least in the substantial absence of UV radiation at a dose of at least 9 Joules/cm² sufficient to effectively treat the skin disorder, said spectral emittance of light energy comprising at least one spectral band in which one of the spectral bands is in the range of 405 to 440 nm, while maintaining the treatment area at a patient acceptable temperature; and

b) controlling parameters associated with the spectral emittance of light energy through an integrated computer module comprising a display unit.
